

## **Remarks**

Applicants respectfully request reconsideration of the present U.S. Patent application as amended herein. Claims 1, 4, 8, 9, 12, 16 and 19 have been amended. Claims 2, 3, 10, 11, 17 and 18 have been canceled. No claims have been added. Thus, claims 1, 4-9, 12-16 and 19-22 are pending.

### DOUBLE PATENTING

Claim 1 was provisionally rejected on the ground of non-statutory obviousness-type double patenting. Claims 2-22 were also provisionally rejected under 35 U.S.C. § 101 as claiming the same subject matter as a co-pending application. As this is a provisional rejection, Applicants elect to defer addressing the rejection until the rejection is no longer provisional.

### CLAIM REJECTION – 35 U.S.C. § 101

Claim 8 was rejected as being directed to non-statutory subject matter. Claim 8 has been amended. Applicants submit that claim 8, as amended, clearly recites statutory subject matter. Accordingly, Applicants request that the rejection be withdrawn.

### CLAIM REJECTIONS – 35 U.S.C. § 102(a)

Claims 1, 2, 7-10, 15-17 and 22 were rejected as being anticipated by “A Space-Frequency Transmitter Diversity Technique for OFDM Systems,” Globecomm 2000, IEEE Global Telecommunications Conference by Lee, et al. (*Lee*). Claims 2, 10 and 17

have been canceled. For at least the reasons set forth below, Applicants submit that claims 1, 7-9, 15, 16 and 22 are not anticipated by *Lee*.

Claim 1 recites:

receiving content for transmission from a plurality of transmit antennae, wherein the received content is a vector of input symbols ( $s$ ) of size  $N_c \times 1$ , wherein  $N_c$  is the number of subcarriers of the multicarrier wireless communication channel; and  
generating a rate-one, space-frequency code matrix from the received content for transmission via the plurality of transmit antennae by dividing the vector of input symbols into a number  $G$  of groups to generate subgroups and multiplying at least a subset of the subgroups by a constellation rotation precoder to produce a number  $G$  of pre-coded vectors ( $v_g$ ), wherein successive symbols from the same group transmitted from the same antenna are at a frequency distance that is multiples of  $NG$  subcarrier spacings.

Thus, Applicants claim use of subgroups for transmission. Independent claims 8, 9 and 16 similarly recite use of subgroups for transmission.

Applicants agree with the Office Action that *Lee* does not disclose use of subgroups for transmission. Therefore, *Lee* cannot anticipate the invention as claimed in claims 1, 8, 9 and 16.

Claim 7 depends from claim 1. Claim 15 depends from claim 9. Claim 22 depends from claim 16. Because dependent claims include the limitations of the claims from which they depend, Applicants submit that claims 7, 15 and 22 are not anticipated by *Lee* for at least the reasons set forth above.

CLAIM REJECTIONS – 35 U.S.C. § 103(a)

Claims 3, 11 and 18 were rejected as being unpatentable over *Lee* in view of U.S. Patent No. 5,559,561 issued to Wei (*Wei*). Claims 3, 11 and 18 have been canceled. Therefore, this rejection is moot.

Claims 4-6, 12-14 and 19-21 were rejected as being unpatentable over *Lee* in view of *Wei* and further in view of U.S. Patent Publication No. 2005/0078761 of Hottinen, et al. (*Hottinen*). *Hottinen* is cited to teach creating diagonal transmission code matrices from transmit diversity code matrices. However, none of the cited references appear to teach successive symbols from the same group transmitted from the same antenna are at a frequency distance that is multiples of NG subcarrier spacings as recited in the claims. Therefore, no combination of *Lee*, *Wei* and *Hottinen* can teach or suggest the invention as claimed in claims 4-6, 12-14 and 19-21.

CONCLUSION

For at least the foregoing reasons, Applicants submit that the rejections have been overcome. Therefore, claims 1, 4-9, 12-16 and 19-22 are in condition for allowance and such action is earnestly solicited. The Examiner is respectfully requested to contact the undersigned by telephone if such contact would further the examination of the present application. Please charge any shortages and credit any overcharges to our Deposit Account number 02-2666.

Respectfully submitted,  
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